**In the Claims:**

Please cancel claims 1 - 32 without prejudice.

Please add new claims 33 - 83 as follows:

33. (New) A transgenic plant resistant to the effects of externally imposed stresses, wherein the transgenic plant comprises a nucleotide sequence comprising an exogenous tonoplast pyrophosphate driven H+ pump gene operably linked to one or more regulatory elements that result in altered expression of vacuolar pyrophosphatase.

34. (New) The transgenic plant of Claim 33, wherein the externally imposed stresses to which the plant is resistant are selected from the group consisting of water deficit and exposure to chilling temperatures.

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35. (New) The transgenic plant of claim 34, wherein the exposure to chilling temperatures comprises exposure to temperatures as low as 10 O° C for a period of 24 hours or more.

36. (New) The transgenic plant of claim 34, wherein the exposure to chilling temperatures comprises exposure to temperatures below O° C for up to 24 hours.

37. (New) The transgenic plant of Claim 33, wherein the plant maintains viability after exposure to a water deficit that is sufficient to compromise the viability of wild-type plants.

38. (New) The transgenic plant of claim 33, wherein the exogenous tonoplast pyrophosphate driven H+ pump gene encodes AVP1, or a homolog thereof.

39. (New) The transgenic plant of Claim 38, wherein the AVP1, or homolog thereof, is encoded by a gene present in a construct designed to overexpress AVP1, or homolog thereof.

40. (New) The transgenic plant of Claim 39, wherein the construct comprises the *AVP1* gene, or homolog thereof, operably linked to one or more regulatory elements comprising nucleic acid that results in overexpression of AVP1.

41. (New) The transgenic plant of Claim 38, wherein the *AVP1* gene or homolog thereof is operably linked to one or more regulatory elements comprising a chimeric promoter selected from the group consisting of tissue specific promoters, constitutive promoters, inducible promoters and combinations thereof.

42. (New) The transgenic plant of Claim 41, wherein the *AVP1* gene is operably linked to one or more regulatory elements comprising a tissue-specific promoter that promotes expression of AVP1 in pollen.

43. (New) The transgenic plant of Claim 41, wherein the *AVP1* gene, or homolog thereof, is operably linked to one or more regulatory elements comprising a double tandem enhancer of a 35S CaMV promoter.

A1 cont'd

44. (New) The transgenic plant of Claim 38, wherein the *AVP1* gene, or homolog thereof, is derived from a wild type plant.

45. (New) The transgenic plant of Claim 38, wherein the AVP1, or homolog thereof, is derived from a transgenic plant.

46. (New) A mutant variation of the transgenic plant of Claim 33.

47. (New) A seed produced by the transgenic plant of Claim 33.

48. (New) A progeny plant from the seed of Claim 47.

49. (New) A transgenic plant obtained by introducing into the genome of the plant exogenous nucleic acid that alters expression of vacuolar pyrophosphatase in the transgenic plant.

50. (New) The transgenic plant of claim 49, wherein the exogenous nucleic acid introduced into the genome of the plant increases the level of expression of vacuolar pyrophosphatase in the transgenic plant.

51. (New) One or more plant cells comprising exogenous nucleic acid that alters expression of vacuolar $H^+$ pyrophosphatase in the plant cell.

52. (New) The one or more plant cells of claim 51, wherein the exogenous nucleic acid controls expression of endogenous AVP1.

53. (New) The one or more plant cells of claim 51, wherein the exogenous nucleic acid comprises a regulatory element that alters expression of vacuolar pyroposphatase to result in conferral of altered phenotypic traits onto plants grown from the plant cells.

54. (New) The plant cells of Claim 51, wherein the cells are obtained from tissue sources selected from the group consisting of roots, stems, seeds and flowers.

A1 cont'd

55. (New) The plant cells of Claim 51, wherein the exogenous nucleic acid encodes AVP1.

56. (New) The plant cells of Claim 51, wherein the AVP1 is derived from a wild type plant of the same species from which the transgenic plant is derived.

57. (New) The plant cells of Claim 51, wherein the AVP1 is derived from a wild type plant of a different species from which the transgenic plant is derived.

58. (New) A method for increasing production of seeds in plants comprising the steps of:

(a) providing pollen from a first plant, wherein the first plant has been transformed with exogenous nucleic acid that alters expression of vacuolar pyrophosphatase to create a transgenic plant;

(b) fertilizing a plant with the pollen from the transgenic plant; and

(c) culturing the fertilized plant until the plant produces mature seeds.

59. (New) The method of claim 58, wherein the exogenous nucleic acid comprises a regulatory element that alters expression of vacuolar pyroposphatase to result in conferral of altered phenotypic traits onto the transformed plant.

60. (New) The method of Claim 58, wherein the fertilized plant is the first plant.

61. (New) The method of Claim 58, wherein the fertilized plant is a second plant.

62. (New) The method of Claim 58, wherein the exogenous nucleic acid with which the fist plant has been transformed comprises a tonoplast pyrophosphate driven H+ pump gene.

63. (New) The method of claim 62, wherein the tonoplast driven $H^+$ pump gene encodes AVP1.

64. (New) The method of Claim 61, wherein the second plant is a transgenic plant.

A1 Cont'd

65. (New) The method of Claim 61, wherein the second plant is a wild type plant.

66. (New) The method of Claim 62, wherein the tonoplast pyrophosphate driven H+ pump gene is operably linked to one or more regulatory elements comprising a chimeric promoter.

67. (New) The method of claim 66, wherein said exogenous tonoplast pyrophosphate driven H+ pump gene encodes AVP1.

68. (New) A plant seed produced by the method of claim 58.

69. (New) A progeny plant grown from the plant seed of claim 68.

70. (New) The method of claim 64, wherein the first and second plants are from the species *A. thaliana*.

71. (New) The method of claim 64, wherein the first and second plants are from the species *Nicotinia tabacum*.

72. (New) The method of claim 65, wherein the first and second plants are from the species *A. thaliana*.

73. (New) The method of claim 65, wherein the first and second plants are from the species *Nicotinia tabacum*.

74. (New) The method of claim 64, wherein the second plant has been transformed with a polynucleotide sequence comprising an exogenous tonoplast pyrophosphatase driven H+ pump gene operably linked to one or more regulatory elements comprising a promoter.

75. (New) A plant seed produced by the method of claim 64.

76. (New) A progeny plant grown from the plant seed of claim 75.

77. (New) A transgenic plant with an enhanced capacity to retain solute species in a vacuole of the plant, wherein the plant has been transformed with exogenous nucleic acid that alters expression of vacuolar pyrophosphatase in the plant.

A1 Cont'd

78. (New) The transgenic plant of claim 77, wherein the exogenous nucleic acid comprises a tonoplast pyrophosphatase driven H+ pump gene encoding AVP1, or a homolog thereof.

79. (New) The transgenic plant of claim 77, wherein the exogenous nucleic acid comprises one or more regulatory elements that enhance the expression of vacuolar pyrophosphatase encoded by endogenous nucleic acid.

80. (New) A method for enhancing the capacity of a plant vacuole to retain solute species comprising the step of introducing into the genome of a plant exogenous nucleic acid that alters expression of vacuolar pyrophosphatase in the plant.

81. (New) The method of claim 80, wherein the exogenous nucleic acid comprises a tonoplast pyrophosphatase driven H+ pump gene operably linked to one or more regulatory elements that result in enhancement of the plant's capacity to retain solute species in a vacuole of the plant.

82. (New) The method of claim 81, wherein the tonoplast pyrophosphatase driven H+ pump gene encodes AVP1, or a homolog thereof.